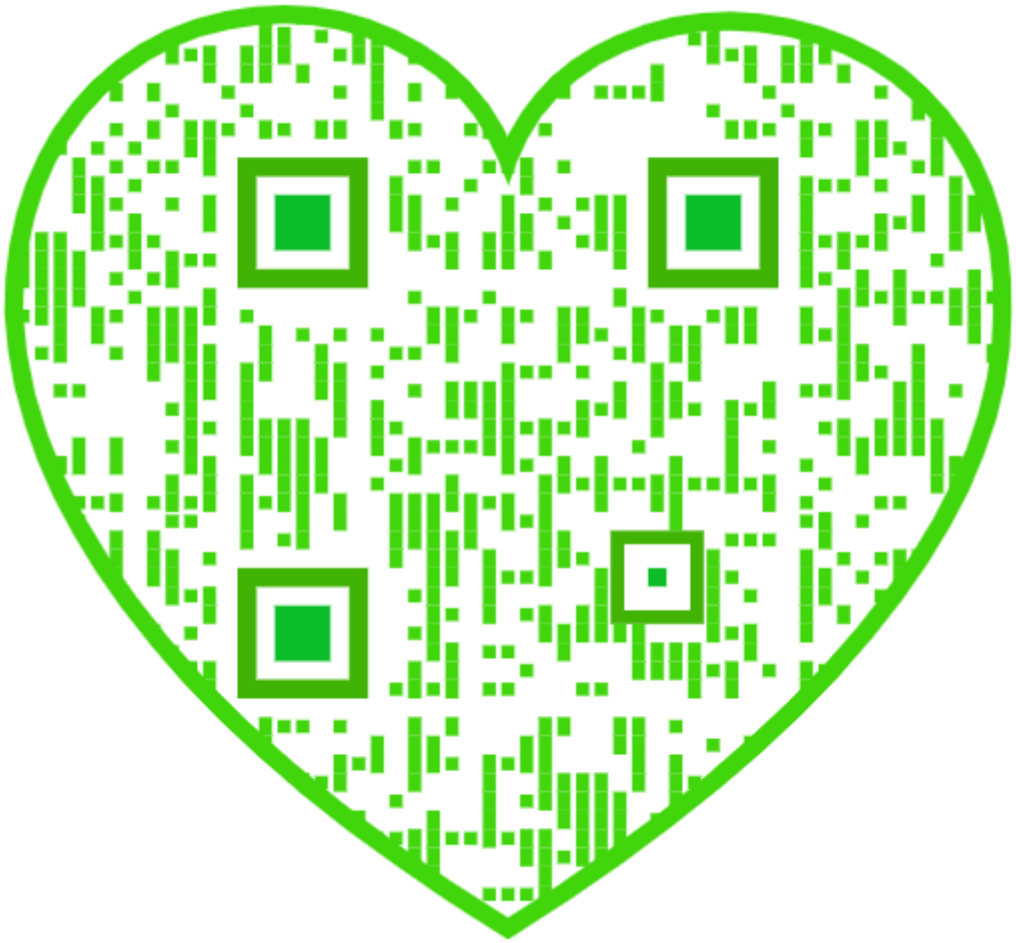
The Art of
Shoeing Horses

By
Wm. J. Moore



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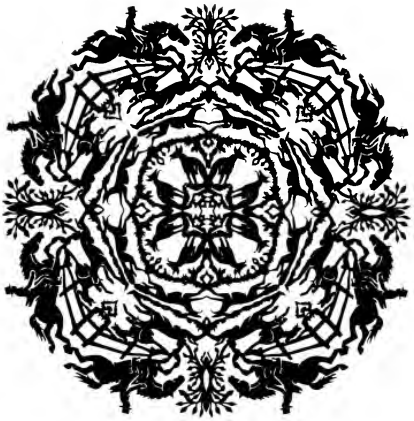

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BALANCING and SHOEING

TROTTING and PACING HORSES

By

WM. J. MOORE

Allen Farm, Pittsfield, Mass.

NEW ENGLAND'S GREATEST NURSERY OF SPEED

CLEVELAND, OHIO
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ALLEN FARM BLACKSMITH SHOP—KREMLIN 2:07¼, AGE 29.

ROBT. SHANKLAND W. J. MOORE

A TREATISE

—ON—

THE ART OF SHOEING HORSES

INTRODUCTION.

This is a plain, unvarnished and practical treatise on the art of balancing and shoeing trotting and pacing horses, unclouded by little known technical and scientific words and phrases, but written by the author, WM. J. MOORE, in his own every day words that can be easily understood by any horseman.

Mr. Moore, who has spent his life in the business of horse shoeing, was born in Richmond, Virginia, in 1865, and later had charge of the Horse Shoeing Department of the Allen Farm at Pittsfield, Massachusetts, for a period of over twenty years, and he is still so engaged at Allen Farm.

Mr. Moore's experience as a horse shoer dates from the time when he commenced work in a horse shoeing shop as an apprentice, at the age of 16 years. Since which time horse shoeing has been his sole occupation.

During this period of 35 years Mr. Moore has shod many noted trotting and pacing horses, and his long, varied and successful experience justifies the belief that no one is better qualified to write on this subject, and to offer advice

in regard to it, than is he, and it is also the belief of those best qualified to judge, that no work of this sort, heretofore written, is more entitled to the confidence of, and acceptance by, the people who own trotting and pacing horses, for whatever purpose they may be used.

With this short preamble in the way of an introduction, we will let Mr. Moore tell his readers in his own words and in his own way how to shoe a trotter or a pacer, so that it may do its best work in the easiest way, and for the greatest benefit to its owner.

W. R. Allen,

Pittsfield, Massachusetts.

June, 1916.

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THE ART OF SHOEING HORSES.

There is something in the foot of the horse that has been a mystery to many who have been unable to find out the secrets by reading some of the books that have been printed on the different subjects, and experimenting on the same, pertaining to a perfect balance of the trotter and pacer when in action.

I have shod all kinds of horses and have come in contact with all kinds of feet, and with the results gotten by practical experiments, I will try to enlighten my readers and the lovers of the light-harness horse.

I. FOALS.

The feet of the suckling foal should be properly fixed every four or five weeks. After the foal is eight or nine weeks old his feet need fixing regularly. To fix the feet on the young foal shorten the toes as much as the foot will stand without making the foot tender, and then rasp the quarters down to a level with the frog, or a little lower than the top of the frog will be better, then round the sharp edges of foot off so as the foal will not cut his legs with the sharp edges and the job is completed. Do not cut out the bars, or the sole, or the frog. Now if you have noticed that a foal stands toeing out, leave the inside of the toe of that foot a little the longest from the coronet, an eighth or three-sixteenths of an inch will be a benefit to the foot, also to the line of action later on, and if the foal toes in, leave the outside of the toe the longest, as it will help to straighten matters in the line of action.

In fixing the foal's feet it is very good to rasp the quarters and heels low enough so as to give a slight frog

pressure when the foot comes in contact with the ground. Frog pressure assists expansion and prevents contraction; a short natural foot with a slight frog pressure during the first and second year is one of the surest ways to prevent a bad gait or a *ruptured tendon,* in later years. Young foals should have their feet picked out two or three times a week to ventilate around the frog, because the filth that usually gets lodged around there will be almost sure to cause heat, and in consequence a diseased frog, which perishes away and allows the heels to contract. A contracted foot is a very bad thing and causes trouble in more ways than one. If the feet on foals are left to grow too long, the inside heels will cave in or become contracted from the position they rest on them while grazing. To prevent this keep them cut down, if not you will have to use hoof expanders to get the foot back to its natural position.

One of the most important factors in keeping the feet on sucklings, weanlings and yearlings in proper condition as is specified in this article is to see that you are keeping the leg in the middle of the foot, otherwise many a good horse suffers, as the concussion and strain is not equally distributed on both sides of the foot when in action. If the feet on sucklings, weanlings, yearlings and two-year-olds are kept properly fixed, quarters and heels kept low enough so as to receive a slight frog pressure, this means at the proper angle, you will not have any elbow hitters and very few knee knockers. If you have a yearling that hits his knees you have not kept his legs in the middle of his feet by keeping his heels and quarters rasped down, which will make it easier to prevent winging into his knees than if he had a contracted inside quarter, which is the case when neglected.

II. PREPARING THE FOOT FOR THE SHOE.

To fix feet is the most important part of shoeing the horse. In fixing the foot, the first thing to take into consideration is, what sort of work are you fixing the foot for, is it for a draft horse, a road horse, or a trotter or a pacer? Does the horse wing, paddle, speedy-cut or cross-fire, does he hit his ankles, shins, knees, arms, hocks, or elbows? Is his action too high or too low? Is he too long or too short gaited? Is he striding longer with one leg than another?

If you go to work and cut the feet down without taking some of these faulty things into consideration you are liable to get his feet just to the reverse way to what they should be, and place him in an uncomfortable position instead of a comfortable one. In preparing the bottom of a horse's foot you must bear in mind that the foot can be fixed to straighten out different kinds of faulty action, and if you have not learned it by a close study of experimenting or by being taught by some one that knew all the different ways of balancing a foot on the leg to correct faulty action, then to learn this you will have to have it explained to you and you should see the job executed, see it done, and then go and see the results obtained, while the horse is in action. Then you will know that something is accomplished by scientifically fixing the feet to correct faulty action; you have to show people nowadays.

Why I say that fixing the feet is the most important part of shoeing, and the most difficult to get done, is because the farriers that can level and balance feet of rough gaited trotters and pacers to assist nature in correcting faulty action are very scarce, some of them cannot think long enough while cutting with the rasp and knife, and the first thing you know they have cut one side of the foot too low and are not able to cut the opposite side on a level to the side that was cut wrong.

Now to fix the feet of a horse whether front or hind, begin with the foot first that looks to be the highest at the heels, because if you should start to fix two feet and one foot is a good deal lower at the heels than the other you cannot cut the heels of the foot that are the highest low enough to place the foot at the same angle with its mate, if you had fixed the foot that had the lowest heels first.

A good rule in fixing feet, and you will find it true nine times out of ten, is, when fixing *front feet*, always cut the *outside* from toe to heel down *first*, unless you are shoeing a *paddler*, then cut the inside of the foot down to a level to correspond with the outside that was fixed first. The reason for fixing feet in this manner, is, if you should cut the inside down first chances are you would not be able to cut the outside to a level with the inside, for you will cut to the sensitive part, on the outside of a front foot, quicker than the inside, and it is just to the reverse with hind feet. The front feet should not be left high on the outside, unless the horse is a *paddling gaited one*, for it creates friction, or a strain on landing and leaving the ground, it also helps to create faulty action. Nearly all the hard shin, knee and arm hitters I have come in contact with, their front feet were highest on the outside, low on inside, or a contracted inside quarter, and sometimes a very badly contracted inside quarter at that. To fix front feet of trotters and pacers for different purposes or ways of going you can refer to the index on the different subjects in this book.

There is very little attention paid to the hind feet. They try to get them the same length and angle, but there are very *few hind feet* properly fixed to control a perfect line of action, to lengthen or shorten the stride, to close or widen the action or to elevate or lower the action. There are very few floormen that can level and balance a hind foot. In preparing it for a shoe to correct faulty

action, the majority of them do not know how to hold the leg to look at the bottom of the foot to tell which side is highest. They should keep in mind while fixing the foot, the results they are trying to get; if they do not, they are liable to get the foot too low on one side or the other. A hind foot that is left the highest on the inside is a dangerous weapon to a trotter or pacer; it will cause injury to ankle ligaments and to bones of the foot. In the majority of cases the angle of a hind foot should be several degrees shorter than the angle of the front feet. A hind foot that is left the highest on the inside on a trotter or pacer will have a tendency to close up the line of action of the hind leg and create crossfiring and shin, hock, ankle and pastern hitting. As the coffin or pedal bone of a horse's foot is symmetrical in shape, it is not proper to have wings of abnormal growth more on one side of the foot than on the other, for this constitutes an unbalanced foot. If it measures more on one side of the foot than on the other, from the center of the frog, make both sides alike, to balance up matters and to conform with the shape of the coffin bone inside; if the toe of one foot is longer than that of the other it creates a longer leverage to leave the ground from, therefore the stride of that leg would naturally be a little longer, everything else being equal. If the heels of one foot are left higher than those of its mate, the stride would be a little shorter and the jar or concussion greater. A good rule in fixing *hind* feet is, always cut or rasp the *inside* of foot down *first,* because you can always get the outside of a hind foot cut down to the level of the inside. A foot should be fixed so that the leg will be kept in the middle of the foot. If the foot has a contracted quarter, one side or the other, you cannot do it until the contracted quarter is expanded, which is easily done (see article on contracted feet). It is difficult to fix feet to suit the leg, and line of action, and also some people's

eye, all at the same time. The frog of the horse's foot should never be cut, if it is in a healthy state. A diseased frog that has loose fragments hanging to it may be trimmed off so as not to be holding filth. Never cut the *heels open* with a knife or rasp to make the foot look wider across the heels, a practice that has long existed with some people. It is unnatural, it helps to contract the heels, and shortens the bearing surface from toe to heel. Any one that does this is dangerous. Trimming out the frog, opening the heels with the knife, cutting out the bars, and too much of the sole, will give you a hoofbound and contracted sore-footed horse, it will help to shorten up his gait and sometimes make him rough gaited. Feet of this kind cannot stand the jar or concussion that feet can that have been properly treated.

III. A TROTTER INCLINED TO SINGLEFOOT AND PACE.

The first thing to do is to change the angle of his front feet to a longer one by rasping the quarters and heels down several degrees, do not take anything off the toes. The hind feet should be in length and angle nearly the same as the front feet, perhaps an eighth of an inch shorter at the toe, and within 3 degrees of the same angle. The second thing is to add about 3 or 4 ounces more weight to the front shoes, and a little more if needed, after you have tried the former. If the horse carries a toe weight put it on also. The third thing to do is to put calks on the hind shoes, toe and heel, using as light a shoe as possible. The fourth thing to do is to allow the animal to go as *low headed* as possible, this is *very important.* The changes in the footing of different tracks will sometimes cause a horse to become all unbalanced. Slipping is very bad for a horse when at speed; it unbalances the action and creates muscle soreness, and the poor animal is made to suffer tor-

ture by some of the drivers or trainers, because the animal does not perform as well on a track that don't suit the shoeing as he did on a previous occasion that did suit, the same way shod. I must say in reference to trotters that are inclined to singlefoot and pace that in fixing the hind feet I would prefer to get the angle of the hind feet as near to the angle of the front feet as possible, because it helps to confine them to the pure trot. The shorter the toe and angle of the hind feet as compared with the front, the quicker they will go into a singlefoot and pace. The causes of the roughness in the gait of the trotter are that the feet are at too short an angle, not carrying weight enough in front, and checked too high, or slipping too much.

IV. CAUSES FOR BECOMING ROUGH GAITED.

The front feet or the hind feet are not mates, or *high heels on one foot and low heels on the opposite;* they are cut too low on one side to hang level compared with the opposite side of the same foot, a long toe on one foot and a short toe on the opposite foot; these variations create a different angle, when it should be the same; that is, the front feet should be mates and the hind feet should be mates. Cutting out the frog, bars and sole, and opening the heels with the knife will also lead to a rough gait when the foot is dry and hard, and the horse strikes a hard track at speed. Carrying head too high, too low, or to one side, or pulling on bit too strong will do the same thing.

After fixing the front feet as directed, do not leave the heels on the hind feet high or the toes of the hind feet too short, fix the hind feet by leaving the toes long enough and the heels low enough to create an angle to within a few degrees the same as the front feet. This will prevent breaking over too quick which increases the

liability to singlefoot, and fixing hind feet this way lengthens the stride and helps to confine the action to the trot longer and purer.

V. SHIN HITTING OF THE FRONT LEGS.

A foot left too high on the outside from centre of toe back to the outside heel will cause this. Some travel very close and others wing in: this winging in is not always because of an imperfect or unbalanced foot, sometimes it is caused by a deformity of the leg, or a contraction of the muscles or ligaments, sometimes they will be either longer or stronger on one side of the leg than on the other, which has a tendency to control winging or paddling. To fix a foot that is hitting the shins of the front legs, shorten the toe to a natural length foot, while doing this keep lowering the outside of the foot, leaving the inside of the foot quite a bit higher, by actual measurement, in some cases a quarter of an inch higher or longer is not too much. Shoe with a plain shoe or a side weight shoe with the heavy side of shoe on the inside of each foot, the heavy or wider side of the shoe will prevent sinking in the ground, which will help matters. Bevel or hot rasp the inside edge of shoe from the inside toe back to the quarters. Shoe with the weight that the horse goes best with.

VI. HOW TO MAKE A SHOE TO PREVENT WINGING IN.

Make a heavy side weight shoe, the same kind of shoe as for a paddler but the weight or heavy side of shoe will have to be on the inside of the foot. Fix the feet, according to article in this book on winging in, to receive this shoe. Bevel or round off the inside toe back to quarters on this shoe. With the foot properly fixed

for this shoe there will be an immediate change. If a toe weight is used keep spur towards inside toe from centre of foot but not far enough to hit knee boot.

VII. SHIN HITTING OF THE HIND LEGS.

There are different causes for this trouble. In the trotter it is because the hind action and the front action do not work in harmony with one another. Excessive hind action will cause it, or excessive front action in some cases will cause it. A front foot that is highest or longest on the outside toe will cause it. What will cause it the quickest and more severely is a *high inside* on the *hind foot,* especially on a horse that has been going open gaited behind. If your horse has plenty of action in front and is going in a medium light shoe I would advise you to level his hind feet; be sure and do not have the *inside* of hind feet the *highest* (which is nearly always the case), but if anything have it a shade the lowest, and shoe the hind feet with an outside weight shoe several ounces heavier than he has been carrying; this will widen his hind action and when he gets to going the weight will keep him outside and clear. This weight can be decreased as his gait is being perfected. The most particular part of this will be to get his *feet properly* prepared to help the line of action.

Perhaps your horse is short in his front action, low and dwelling gaited, too much so for his hind action, if so, shoe him in front with heavier shoe, say 5 ounce heavier or even more as the case may need, bevel or roll the toe, also bevel the outside edge from the outside toe to heel of front shoes where the shin hitting is done. If your horse wings in towards his knees or arms, the inside of front feet should be left the highest. I prefer in shoeing such horses to keep them going as close in line as pos-

sible with hind legs and if he cannot, without interference, then they will have to go outside (see article on how to widen hind action).

VIII. KNEE AND ARM HITTING.

This has been a great worry to "the smart set," "the know it alls" for many years, as to what causes it, and what to do to help or prevent it. Winging in is caused sometimes by a deformity, or by contracted muscles or ligaments stronger on one side of the leg than on the other; sometimes deformed feet, or a badly contracted inside quarter will be the cause of some of this trouble, because the weight of the horse at the ankle drops over the inside heel instead of coming down in the middle of the foot. A contracted inside quarter and a high or long outside toe are dangerous weapons for a horse to be carrying, one of these at a time is bad enough, but when a foot is troubled with both it is *very bad.* If your knee or arm hitter has a contracted quarter on a front foot, the first thing to do is to get a hoof expander and expand the contracted quarter. This will be an important step towards getting the leg in the middle of the foot. In all my experience with knee and arm hitters I have found the offending foot too high on the outside, with the most of the foot from the center of the frog on the outside of the leg. With height and width of foot on the outside of the leg, it is just contrary to science. To straighten the line of action this needs to be reversed; edge up the outside edge of the foot from the outside toe to the point at quarters as much as it will stand, do it at every shoeing and you will be getting the leg closer to the middle of the foot. If you can get a little more of the foot on the inside of the leg than is on the outside, it will be a benefit to a bad knee and arm hitter. Another thing, the shorter the toe or angle of a knee hitter the easier he can leave the ground and the less he will wing in, and the lighter

will be the blow if he hits. The knee hitter should be shod as lightly as he will go at speed, balanced. The lighter the weight he is carrying the lighter the blow if he strikes. The best kind of a shoe for a knee-hitter is a side weight shoe with the heavy side on the inside of the foot; good results are obtained with heel and toe calks, the toe calks *well set back* on the toe of the shoe.

These calks on the shoe of a knee and arm hitter should be a little thin so as to catch hold of the ground as the foot goes to twist before he picks it up; they will prevent a certain amount of twisting while the body of the animal is gliding over the weight-bearing portion of the leg as the foot leaves the ground. They will have a tendency to make him break over squarer and not so hard on the outside toe as the foot is leaving the ground. Now if your knee-hitter wears a toe weight attach it towards the inside toe as far as possible but not far enough to the inside so as he will strike the opposite leg with it. When the feet of a knee-hitter have been gotten in the shape as described herein and shod accordingly; why, the horse will think that he has been baptized and born over again. A perfect foot is rare, but with good judgment, a good eye and a little patience and perseverance a lot can be accomplished that will surprise some of those that think they know it all. In a knee hitter, also in an arm hitter, the bones of the foot and leg do not work true in their sockets, clear up to the knee, even the joint at the knee does not work true, the knee joint has a faulty motion, instead of breaking straight forward, it breaks out sideways as the rest of the leg starts to wing in. By building the foot mostly to the inside of the leg and having width and height of foot on the inside you are taking some of the power away that causes the winging in, and the breaking outward of the knee. It is something strange, but I have known knee and shin and arm hitters to be turned out with their shoes on in

paddocks, and you would seldom see them hurt themselves, but put the harness on, hitch them up, and start them at speed and take a pull of 75 or 100 pounds on their lower jaw and the trouble would begin. The directions in this article for fixing the foot for knee and arm hitting are also the surest remedy for horses that toe out badly, a fault that is so objectionable to all horsemen. If you use a sideweight shoe on a front foot to prevent shin, knee and arm hitting, the heavy part of shoe should be on the inside of foot, but if you leave the outside of the foot one-sixteenth or one-eighth of an inch higher than the inside, you will be working against the results you are looking for.

It looks strange to many people that an outside-weight shoe to a *front foot* has a tendency to make a horse wing in, and the same shoe applied to a hind foot will widen the hind action, with the foot fixed for that purpose. If you can fix the foot *properly* to control the line of action that you want, you will surely accomplish something. You should know what angle suits the action best. The foot should be symmetrical in shape to conform with the coffin bone, have no more foot on one side of the frog than on the other side, and the bearing surface to hang so as the foot will land on and leave the ground as square or level as possible.

IX. JOGGING A KNEE KNOCKER WINTER AND SPRING, AND THE BEST WAY TO SHOE AND FIX THE FOOT TO DEVELOP THE MUSCLES.

Lower the outside of the foot of the winging in leg, and *keep it the lowest.* Shoe the foot with a *very light shoe,* plain or bar shoe, have a side pocket weight made that will carry from 6 to 9 ounces of lead with a spur on it; cut or burn a hole in the bottom edge of the foot midway between toe and heel for the spur, buckle it tight to foot, the

weight to be on inside of foot. If the horse wings in with both front feet use the pocket weights on both feet and fix both feet as directed above. This will have a wonderful effect *in developing muscle* while taking his slow work that will help to prevent winging in so bad when he begins faster work. This knee knocker should be shod with a side weight shoe, the heft of weight on inside of foot, shoe should be very light on outside. This shoe should be made thick on inside with a bevel thinned towards the outside toe, a difficult shoe to make to be used when pocket weights are discarded for fast work.

X. A BAD SHIN, KNEE AND ARM HITTER, TROTTER.

A chronic shin, knee and arm hitter was a horse called Rustler, owned at Richmond, Va. In the early part of the summer that he raced so well, he was working miles around 2:41 and 2:42 but very unsteady, breaking continually. He would begin by hitting his shins, as speed was increased he would hit his knees and arms so hard that he would not stay on the trot. He was brought to me to shoe by his colored groom, who also brought his boots, as I had never seen the horse in action, but after seeing the boots he wore, I saw at a glance he needed as far as gaiting or balancing was concerned, to be regenerated. He was a large horse, and his feet had not grown much from the last shoeing so as I could change them to my liking. I was informed that he went best in light shoes, but the owner told me to use my own judgment, so I did. I made a pair of sideweight shoes, 18 ounces with toe and heel calks, the heavy side of shoes on the inside of each front foot, the outside of each front shoe as light as possible. After leveling his hind feet, a light shoe with heel calks was put on. The owner, Mr. C. J. Smith of Richmond, Va., came to the

shop and looked at the front shoes and did not like the job, as to the weight and the calks, thinking if he did not knock a leg off, he would cut boots and legs to smithereens. I told him I would change them if he thought it best, but before I got ready to take them off he said leave them on and I will try them and see what he will do with them. The groom drove him out to the track, and Mr. Smith, being present, ordered the groom to drive him a slow mile as the trainer was not there; he worked the second mile so easy that he was worked another easy mile in 2:21, the last quarter well within himself in 33 seconds without a break, over the same half-mile track on which he could not beat 2:41 previous to this shoeing. They said when he got on his stride there was nothing the matter with him. I had not heard from the horse for nearly a week when one day as the owner was driving by I hailed him asking how was Rustler, he said "he is all right, there isn't a thing the matter with him." He went to the races, started in at Baltimore, Maryland, and after winning seven or eight consecutive races, finished at Readville a close second in 2:12. Most of his races were won in the same front shoes it took to balance him, and yet some writers will say you cannot get immediate results.

XI. SHIN, KNEE AND ARM HITTING PACER.

H. J. Rockwell and Rustler a pacer and trotter respectively, would hit and cut their boots something terrible. I took H. J. Rockwell away from his knees by the mode of foot fixing and shoeing hereinbefore prescribed and that made a race horse of him, whereas he had been hitting his knees for several years. While he was hitting his knees he was rated as a quitter, but after he began to beat horses like "B. B." over the half-mile tracks, the race followers wanted to know from his trainer, the late F. M. Dodge,

what he had done to him. I mention this particular case because the public or horsemen that knew this horse knew he was a tough proposition to balance.

XII. ELBOW HITTING.

Some horses do this when being speeded. It is caused by excessive knee action, in folding up of the leg, also in the flexing of the pastern joint. It is faulty or lost action. For elbow hitting, as a rule, the horse should be made to go in as light a shoe as possible, he should get his training with his front feet kept as low as possible at the quarters and heels and the foot at an angle of about 49 degrees, he should be shod as light as possible with plain or bar shoes, and with as light a *toe weight* as possible, for the more toe weight he carries the harder he will go to his elbows. Most all elbow hitters hit their elbows with the toes of the shoe while the knee is being elevated. It would be a hard matter for a horse to hit his elbows with the heels of the shoes with the knee extended and elevated, for at this time is when the fold of the knee and flexing of the pastern causes the toe of the shoe to strike against the elbow. If preparing the foot for the shoe as stated above and shoeing the feet light does not stop the elbow hitting apply a bar shoe with most all the weight in the bar and quarters of the shoe, the shoe being light as possible around the toe where the nail holes are punched. Be sure and have the quarters and heels as low as possible. The reason for low quarters and heels on an elbow hitter is, that it makes a longer angle to leave the ground from, and it gives a longer bearing surface behind the leg, to receive the weight that is in the quarters and bar of the shoe which is put there to prevent some of the folding of the knee and some of the flexing of the pastern that causes the interference. I have been very successful shoeing elbow hitters with this kind of a shoe. All elbow hitters should be worked to go as low headed as

possible, a standing martingale works well on some. If you put on too much of a toe weight on some horses that go close to their elbows it will drive their action to, or against their elbows. Now this being the case, if toe weights will drive him to his elbows a heel weight will usually prevent folding against the elbows.

Now in making this shoe for an elbow hitter it will be necessary to add from four to six ounces more weight to the shoes than he has been carrying, but put it all in the quarters and bar at the heels, and keep adding weight to the heels of front shoes until he stops hitting his elbows. This kind of a shoe is to be used when a very light shoe fails to prevent elbow hitting. Squaring the toe of the shoe will also help to lighten the blow, or take him that much farther away from his elbows.

To decrease the lofty folding action of elbow hitters the foot should be placed at an angle of from 47 to 49 degrees or as near to that as possible, and add the amount of weight of shoes he has been carrying to the toe weight and also add not less than four or five ounces more to each of a pair of heel weight shoes, when a light one did not answer. Do not use any toe weight, but if the heel weight bar shoes are not heavy enough, a heavier shoe or quarter boot can be used.

One thing that should not be overlooked in a horse hitting his elbows is his hind action, it should be examined closely. The hind action may be too dwelling gaited, the stride may be too short or too long. Now if the hind action is of a sluggish nature, it will be a benefit to increase his propelling power, it will drive his elbow an inch, more or less, away from the flexing of the foot against it. If he is long and dwelly gaited you can quicken or make him more rapid, if he is striding too short you can lengthen his stride by fixing his feet and applying weight. It is very important to increase his propelling power. A horse that hits his

elbows needs to be balanced by foot fixing, and the applying of weight to go on as light a line as possible, because the harder he pulls on the bit when at speed the more he is inclined to hit his elbows.

If the hind stride is too long and dwelly, shorten the hind toes considerably and use a square toe shoe and raise the heels with a side calk. If the hind stride is too short lower the quarters and heels of the hind feet as much as they will stand and add two or three ounces more weight to the hind shoes. With toe and heel calks a horse with a long cannon bone, with lofty action that flexes his foot from the ground with a snap is more likely to hit his elbows than a horse with shorter cannon bones.

XIII. AN UNUSUAL CASE OF ELBOW HITTING.

A horse that hits the right elbow with the left foot and the left elbow with the right foot is seldom seen. The horse *Hunter Hill* would begin doing this when going at a 2:40 gait or better, and would act bad and unsteady. He was brought to me to shoe and I was told he could not carry any weight. As he had not enough foot to change, I told the trainer he would have to carry weight to counteract the faulty winging in to the elbows. I made a pair of eighteen ounce heavy side weight shoes with the weight on the inside of each front shoe, thin heel and toe calks, toe calks well set back on toe of front shoes. These shoes took him away from his elbows and he raced good over the half-mile tracks stepping miles around 2:12. After he got gaited these side-weight shoes were discarded for plain lighter shoes.

XIV. PADDLING.

Just the reverse to winging in, a tiresome lost motion, a source of worry to horse and driver, especially if the

horse has speed and is driven on sharp turns on half-mile tracks, but it is not as dangerous as the winging in hard to knees. Paddling is more easily controlled than winging in. Now to straighten the paddler, fix the foot on the leg that paddles, by cutting or rasping the inside of the foot from the inside toe back to the inside heel as low as possible, leaving the outside toe the highest or longest to leave the ground from. Be sure and have the inside of foot the lowest, the outside toe the longest. To begin this an angle close to 50 degrees or less, say 49, will have wonderful effect. The long or high toe on the outside will have a tendency to make the leg wing towards his knees at speed which is the controlling influence against paddling. The long or high outside toe is the part that has to leave the ground the last, which *creates winging*, and helps to stop paddling. To shoe a paddler, shoe with a light shoe, with as little weight as possible to go balanced. The more weight the more he will paddle, the less weight the less paddle.

The best shoe for a bad paddler is a side-weight shoe extra heavy on the outside of foot, bevel the outside edges of front shoes good. If the change of action is not quick enough you can use a toe weight placed on the foot well to the outside toe of foot. When I could not get the inside of foot low enough compared with the outside of foot I have made the front shoes thicker on the outside than the inside. When you have fixed the feet and shod a paddler this way you will begin to think that paddling can be stopped when at speed. Most paddlers must go as light in front as possible. With the feet fixed and shod as herein stated you will be surprised at the change of action that will take place when at speed, after a week's driving. The faster the paddler is driven the less paddling he will be doing. The outside of the foot on a paddler needs to be kept the highest, which is just to the reverse of a knee and arm

hitter, this applies to the front feet and action of the front legs.

XV. HOW TO MAKE A SHOE TO PREVENT PADDLING.

Take a piece of iron or steel two or three ounces heavier than the shoe the horse has been carrying and draw one end of it very light having it quite thin. Make a heavy outside weight shoe of it, leaving all the thickness at the outside toe of shoe, thin the outside heel down to the same as the inside heel. The outside edge of this shoe will be thick, but tapering thin to the inside edge of the outside web of shoe. This shoe begins to get light, narrow and very thin at centre of toe around to inside heel. Look up article on foot fixing to prevent paddling at speed when using this shoe. The horse's foot will have to leave the ground from the outside toe of this shoe when stepping fast and this will have a tendency to make him wing in, and the line of action will become straighter as the animal becomes accustomed to it. This change can be quite *radical*, on a horse that has been paddling a long time, and not so rank on young stock just beginning to get gaited. This shoe does not stop the paddling on all animals when jogging slow as the foot can leave the ground or break over from center or inside toe of shoe, which has no control to prevent a slight paddle.

XVI. HITCHING, HOPPING OR RUNNING BEHIND.

This way of going comes from different causes. An unbalanced foot from being improperly fixed, will cause it. The improper weight of shoes at one end or the other, or all around, will cause it; speeding a colt or horse that is pulling too much weight, especially up a grade, will cause

it; forging, scalping, speedy-cutting, shin and hock hitting will cause it; carrying the head to one side at times will cause it; soreness of the back, rump or muscles of whirl-bone, stifle or thigh will cause it.

Examine the faulty leg for soreness, for if the horse is not lame from soreness somewhere, he can be balanced to go true. If a horse begins hitching, his fast work should be stopped until he is properly balanced, for no horse can improve his speed after he becomes rough gaited without danger to himself. The first thing to do is to get him balanced. First, see that his feet are level. Nine times out of ten you will find his feet are not mates or do not hang level, you will find the foot on the offending leg that is doing the damage different from its mate. In all my experience I have found the foot on the faulty gaited leg to be very high on the inside, if not at the toe, it would be at the heel, but the majority of times it would be high from toe to heel, which would be the main cause of the hitching. Fix the front feet to hang level, the angle and length of toes the same. The two hind feet should be at the same angle and have the same length of toe. The foot of the faulty going leg should be made the *lowest on the inside* and the shoe to be used on this foot must weigh double the weight or from one to three ounces more than double the weight of the one on the opposite hind foot. This shoe can be made with the weight in the outside, with the inside edge from the centre of toe back to the inside quarter rounded or beveled off considerably, fit the shoe full to the outside toe. If the hitching horse is shod according to these directions and does not begin to go better gaited, it is because he is lame. If he carries five ounce shoes behind put twelve or thirteen ounce on the faulty gaited leg and the light shoe on perfect gaited leg.

XVII. FORGING.

This is a very annoying fault and the same rules to remedy it do not apply to all horses, for what will stop one may not stop another. Most all forging will be done jogging, or going an ordinary road gait. From forging comes the scalping which is very dangerous when the horse begins to brush along, as scalping creates rough and bad gaited horses. There are many horses that will forge or scalp going slow in the same shoes that suit them for speed. It is hard to shoe all horses with a set of shoes that will suit the horse, the driver and a faulty gait at varying rates of speed, all at the same time. Horses that are *low gaited* in front that forge jogging, need as a rule, a lot more weight in their front shoes. Horses that go high gaited with lots of knee action in front that forge require a light shoe. Forgers usually have excessive action either in front or behind. Locate the faulty end, see if the horse has too much action in front and not enough behind, or if he has too much behind and not enough in front. Get a line on his gait before you make any changes, perhaps you may not have to change but one end of him to either increase or decrease action. Weight in the shoe is the important factor applied to a perfectly balanced foot, whether it is a front foot or a hind foot. You can add weight to the front or hind feet, as may be desired, to increase action, or decrease the weight to decrease the action at either end. Now right here I will say, a horse jogging hardly feels a change of weight of one, two or three ounces, but will show the effect of five or six ounces from the start. Do not be afraid to apply a heavy shoe to hind feet for if his action requires it to prevent forging, the horse will like it better and so will you.

In adding weight to hind feet you will be increasing the hock action and in some horses it will take considerable weight to do it; horses going an ordinary road gait will

not feel one, two or three ounces increase of weight in hind shoes. Horses stepping fast as a rule do not do any forging and, of course, the lighter they can go the better. There are many horses—fast trotters—that forge or scalp jogging, that would go cleaner or purer by applying a four-ounce toe weight, some may need a five-ounce weight, lots of them have to be jogged too fast in order to prevent forging or scalping, when perhaps a toe weight would be the remedy. A horse going a 2:10 gait will feel the effects of a one or two ounce weight as much as one going a slow gait would feel the effects of four or five ounces.

Take a side view of your horse as he is driven by and locate the faulty action, you will be able to tell if it is too short, too long, too high or too low, too rapid or too dwelly, front or hind action. If the lost action is in front as to height, extension or rapidity, fix the feet to help the shoes to perfect the action. If the front action is too low shorten the toes, leave the heels high or raise them with shoe or side calks and shoe with a shoe five or six ounces heavier, more or less, as the action requires, use a square or bevel toe shoe. A rolling toe shoe is good on slow-going horses, the horse should carry his head higher than usual. If the front action is too high, lower the quarters and heels as low as they will stand, and shoe with a light shoe, and if there is not extension enough use a toe weight to balance up action, the horse should carry his head lower, or natural. If the hind action is too low shorten toes as much as they will stand and add several ounces more weight and raise the heels a half inch or more. If hind action is too high lower quarters and heels as low as they will stand, keeping plenty of toe on hind feet and shoe with a very light shoe to prevent slipping. If he is handling his hind legs too rapid for the front ones, this last sentence will remedy that also. I have seen obstinate forgers at a slow gait stopped by carrying from two to three times more weight on the hind feet than in the front feet, and vice versa, according to their front or hind action.

XVIII. SCALPING.

This is a very dangerous fault. When a horse is making speed and begins scalping, he is unbalanced quite bad, he needs changing before being speeded again for if you don't he or she will get rough gaited, or will begin carrying the hind leg between front ones, hopping, or trying to run with hind action. The first thing to do is to examine the hind feet, you are likely to find the hind feet a lot higher on the inside than on the outside nine times out of ten. Some horses will begin scalping after their feet get too long. In horses with excessive action, carrying too much weight in front will cause scalping at speed. Horses with very little action in front and not carrying weight enough will be liable to scalp at speed. When shoeing for scalping use a square toe shoe, light or heavy, as may be required by the front action.

Feet all out of proportion and at the wrong angle and not level will cause scalping. Now if the animal has very little hock action and mostly stifle action, I would lower and shorten the toes of the hind feet as much as possible, use a square toe shoe and raise the heels with a side calk, this will shorten the stride and by adding some weight to the hind shoe it will increase hock action. Most all scalping is done with front or outside toe of the front shoe coming in contact with the coronet of hind foot. It hurts the horse so much that he will try to find some way to avoid it; some trainers use a gaiting pole to prevent the horse from going crooked in the shafts because of this fault.

XIX. REMEDY FOR SCALPING.

If the front action is low, long and of a sluggish nature, shorten the toes of feet considerable and add about five ounces more weight to the shoes, or more, if required to create a more lofty knee fold. The action of some horses

requires a lot more weight than others to make the change. The shoes to be used, if working to make speed should be a square toe shoe, or a beveled toe shoe, also a wedged shaped shoe thick at the heels and thin at the toe is good, squared at the toe. For ordinary road driving a rolling toe shoe is good, but not for extreme speed, as it has a tendency with most horses to slip back too much on leaving the ground; and the horse should be made to carry his head higher than usual. If the front action is high, short, or too rapid, not working in harmony with the hind, lower the quarters and heels of front feet as much as they will stand and keep a fair length toe on the front feet and shoe with a very light shoe and use a toe weight to balance for extension, place a spur for toe weight well up on toe of foot out of way of the scalping; and the horse should be made to go as low headed as is comfortable to him.

If the hind action is low, long or of a dwelling nature, shorten the toes as much as they will stand, and shoe, to elevate the heels, with a thick heel shoe, or raise the heels with side calks. A few ounces more weight than he has been carrying will be all the better to make him use his hocks more. If the hind action is high and choppy with not much extension, lower quarters and heels as much as they will stand and keep a fair length toe on him, it will keep him closer to the ground; and shoe light to prevent slipping.

A side view of the animal as he is driven by you will give you the correct view of his front and hind action. If the action is too short, too long, too high or too low, in front or behind, the chances are you may not have to change but one end of him if you have a good eye for locating faulty action. If your horse is good and can beat his record, or go the race of his life, and scalps jogging, try a toe weight on him in front, if it does not stop him wear scalpers on him jogging and let well enough alone.

I have had to take a three and one half ounce shoe off a colt that trotted eighths of a mile in seventeen and a quarter seconds, that was scalping jogging, and shoe him with a ten and a half ounce heel weight shoe nailed back near quarters of hind feet to prevent him from scalping at the jog, after two changes in the front shoeing.

XX. SIDEWEIGHTS.

Sideweight shoes with the weight on the outside have a different effect or result on front and hind action. An outside-weight shoe on a front foot has a tendency to make the leg wing in, and an outside weight shoe on a hind foot will widen and lengthen the stride, if feet are properly prepared, so you see it widens the hind action and closes the front action. To close the action of the front leg with this sideweight, lower the front foot on the inside. To widen the action of hind leg, lower the inside of hind feet. This sideweight shoe will help a paddler that has to carry a little weight, if you will lower the inside of the foot, but it is no good for a knee knocker. The outside-weight shoe has a different effect on front and hind action, has a tendency to close one and widen the other.

Sideweight shoes are good to correct the following faulty lines of action if the feet are correctly prepared for them to help the shoe, for if the foot, or feet, are not properly fixed to help the line of action this faulty fixed foot will work against the effect of the sideweight, and the results will be very unsatisfactory. Sideweight shoes are best for winging in, or paddling out, with front legs, hitching or hopping or carrying a hind leg in, out of line, or carrying a hind leg between the front legs, also good for a wheel swinging hind leg.

XXI. WHEEL SWINGING.

A trotter that is wheel swinging a hind leg, has developed a line of action that is tiresome, controlled mostly by the muscles on the outside of leg, that unbalances action at speed to a certain extent, and it looks unsightly to a good judge of gait, when coming to you or going from you. To correct this faulty line of action of wheel swinging, keep the toe of hind feet nearly as long as the front feet, and have the angle of the hind feet within two or three degrees of the same as the front feet. If the angle of front feet is fifty degrees have the angle of the hind feet about fifty-two or three degrees. Lower the outside of hind foot a full quarter of an inch or more than it will be on the inside, begin lowering the outside of hind foot at the center of toe back to outside heel, have both hind feet the same length and angle. Shoe with a sideweight shoe heaviest side of shoe on inside of foot, with heelcalks, and place a thin low calk about one inch long on inside toe of shoe in line from first to second nail holes. After the first shoeing, if line of action has not improved as it should, you must lower the outside of hind foot still more, but if you cannot lower the foot have a shoe made thicker on the inside toe and thinner on the outside toe and quarters, with the three calks on it and there will be more of a change. This change can be made in the first shoeing if you have enough of foot to change, but it is best for the horse and owner not to make too radical a change too quickly. It is best to do it in two or three shoeings, especially on a horse that has a lot of speed. Slow going horses can stand more of a radical change than fast ones.

The directions in this article for the cure of wheel-swinging, by foot fixing and shoeing, will create a sudden change, at different points, on the bones of the foot and leg, so as to create a leverage at a particular point as the foot leaves the ground, to control a more perfect line of action.

Be sure your horse is not carrying his head off to one side, the opposite side to the wheel-swinging leg, for if so this helps to unbalance action and works against the results you are trying to get to a certain extent. Do not have the outside heel of shoe any longer than the inside but have both same length.

XXII. KNUCKLING OVER.

This is caused by weakness, sometimes of the ligaments that hold the bones of ankle in their sockets, and sometimes higher up. To shoe for this, the first thing to do is to prepare the foot. You are likely to find the hind feet abnormally long, perhaps longer than the front feet. Lower the toes of hind feet as much as they will stand, shorten toes by rasping off as much as the foot will stand, do not *touch* the heels or have the inside of foot higher than the outside. Now use a light hind shoe, with side calks, the calks to be one and a half to two inches long, and tapering towards the toe of shoe. At the point of heel this calk should be not less than one-half inch high, the higher the better, a square toe shoe is much better than a plain one, shod this way the very best result is obtained at once. A shoe made thick at heels, three-quarters of an inch or more, and thin at the toe for ordinary driving is good.

XXIII. STUMBLING.

Is a very dangerous fault and is from a weakness that can be helped a lot. The front feet of a stumbler should be kept as short as possible at the toe. Elevate the heels as much as would be comfortable to the leg and horse. A stumbler should be made to carry some weight in his front shoes because the weight increases knee action, and this is what you want in a stumbler. Shoe with a toe-weight shoe thick at the heels, for height, and roll the toes of the shoes

as much as possible, a bevel toed shoe is also good, keep the heels middling high, and the toes cut down low and shortened up. These shoes are not very good for fast work, as they will slip back too much on leaving the ground, which retards speed but will help to make speed in lots of slow ones that require action.

XXIV. SPEEDY CUTTING.

A horse that is taking his work and is "speed cutting" and still continues to be a good actor must be game. Speed cutting begins at the coronet or a little higher up and continues up the pastern mostly on the inside of leg to the top of ankle and even above that. There are three things that cause this, the most prominent one to look for, is the inside of the hind feet are a lot higher than the outside; seven times out of ten the outside of front feet will be found longer or higher than the inside. The horse may or may not be carrying the proper weight. If he is pulling a part of a ton on the bit to hold him together, he is not properly balanced with weight. The hitting is mostly done with the outside toe of the front shoe. If you can find some one who can level and balance these feet on the legs there will be a big change in the action.

Excessive front, and not enough of hind, action will cause speed cutting. Excessive hock and stifle action and not enough action in front will also cause it. When the action is excessive, decrease it by lowering the quarters and heels and by shoeing very light, if the action of the other end needs to be increased, shorten the toes and add weight, do not be afraid, four to five ounces will be better to experiment with than one or two. After the horse gains confidence he may not need any extra weight. The most important thing will be to find some one who can fix the feet, and the feet will be found as I have stated above. There are very few who are good judges of a balanced foot. It

takes an expert to detect the high and low side of a foot. Horses that wing into their knees and those that paddle away from their knees, and line trotters, contract this fault because of an improperly prepared foot to control the faulty line of action and at times not carrying the proper amount of weight front and hind to balance the action so that the hind action will work in harmony with the front.

If the horse wings in toward his knees with one or both front feet fix the front feet according to the directions in this book in the chapter on winging in or knee hitting. If the horse paddles out away from his knees, I refer you to the chapter on Paddling to prepare his feet by, and use the shoes therein prescribed. If the front action is excessive and lofty you must lower the quarters and heels to give him a longer leverage to leave the ground from, and shoe with a light shoe, and balance him with a toe weight for extension, and have the feet the same length and angle.

To prepare the feet on a speedy cutter, rasp down or lower the inside of foot from centre of toe back to inside heel to a level or a fraction lower than the outside of the foot, have the toes of both feet the same length, and at the angle he shows the most speed with. Shoe with a side-weight shoe, the heavy side of shoe on the outside of foot and calked to prevent slipping.

To shorten the hind stride use a light shoe, raise the heels and shorten the toes of the hind feet as much as they will stand. To lengthen the stride of the hind feet, lower the quarters and heels to a longer angle to leave the ground from, and add several ounces more weight than the horse has been carrying to each shoe; the inside edges of hind shoes from the toe back to quarters should be beveled off. The edges of front shoes should be beveled off on both outside and inside.

XXV. A BAD SPEEDY CUTTER.

The late Freeman M. Dodge of Pittsfield, Mass., trainer and driver, had a bay mare by the name of "Tillie Wilkes" that was speedy cutting so bad that he was not able to work her, and he came to me to find out if I could stop her from speedy cutting. I told him I could not tell until I saw her driven. He brought her over and drove her down the stretch at a three minute gait. This mare had a sore spot on the lower inside of one hind ankle that was raw, the size of a silver dollar and when she began touching this spot, speedy cutting, she would jump and begin running. After seeing this mare driven I found she had excessive action in front and very lofty, and her hind action mostly all stifle action and very little hock action and her feet were in bad shape. She was driven over the next day to be shod and I had her shoes ready when she arrived. I fixed this mare's front feet by lowering her quarters and heels as much as nature would allow me, and left all the toe possible. This gave her a longer leverage to leave the ground from, which kept her from breaking over so quick, and it reduced her lofty knee action and created more extension. I took off a twelve-ounce shoe from each of her front feet, and applied a four-ounce aluminum shoe.

Fixing her hind feet and shoeing them was the most important. I shortened the toes and lowered the inside of each hind foot until the inside of them was as low as the outside or a shade lower if anything. I fitted a pair of heavy side-weight shoes, the heavy side of the shoes on the outside of the hind feet, each hind shoe weighed about eleven ounces with heel calks. This job stopped all the speedy cutting and she trotted quarters in 31 seconds shortly after, and was sold to Mr. Shults for $750.00.

XXVI. GAITING COLTS.

Sometimes you will find a colt that has not much knee, hock or stifle action and not much speed, and in such cases, to remedy the defect, after the feet have been leveled the hind feet a shade shorter than the front, I would recommend a heavy rolling toe shoe in front, eight, nine or ten ounces and a little lighter one behind, two or three ounces lighter. If the foot is large and the colt is strong, eleven ounces in front to begin with. Now as the action increases, decrease the weight. When the colt begins to make speed he or she will not need a rolling toe shoe in front, a plain shoe is better, one that will not slip back on leaving the ground. As the colt begins to make speed the action of the legs needs watching because sometimes they will begin to show a faulty line of action.

If they begin to get faulty they are liable to begin winging in or paddling out, and when shod again the feet can be fixed to prevent this way of going at speed. The most important thing is *fixing* their feet to prevent a faulty line of action for if the feet are not kept level they will begin getting rough gaited and unsteady. One important thing in fixing feet on yearlings to be shod and worked for speed is to keep the quarters and heels of front feet as low as possible, it affords comfort in landing and increases extension without carrying so much weight. Colts that have a lot of action at both ends, hind and front, need very light shoes all round, you can find out the proper balance with a toe weight.

To increase extension, lower the quarters and heels and apply toe weights instead of useing so much in the shoe. The colt should carry a natural head, not too high and not too low, the lower the better if he is inclined to mix. If your colt is short and choppy gaited in his hind action lower the quarters and heels of hind feet and shoe with a heavy toeweight plain shoe and extend the shoe out one-quarter

of an inch or more in front of toe of hind foot. When the colt begins to make speed decrease the weight of shoe of hind feet. Some youngsters require more weight behind than in front to equalize action so as to work harmoniously front and rear.

If you have a mixed-gaited colt and you want to make a trotter out of him or her, keep plenty of foot on both hind and front feet, especially at the toes. When fixing the feet to be shod cut or rasp the quarters and heels of both front and hind feet as low as possible, keep plenty of toe on front and hind feet. Usually you will find that the front feet have the longest angle to leave the ground from, but by lowering the quarters and heels of hind feet to get them as near as you can to the same angle of the front feet, the more you will be confining the gait to a pure trot, and there will be less danger of singlefooting or pacing.

I want my readers to distinctly understand that there is a set of pacing feet for a pacer and a set of trotting feet for a trotter, especially at the time when you are going to convert a trotter to the pace or a pacer to the trot. That, however, will be explained later in this book. If your trotting colt becomes mixed gaited or goes into a singlefoot or pace, the first thing to do is to lower the quarters and heels of hind feet as much as possible, keep all the toe on him you can and shoe with a light shoe with toe and heel calks. The front feet should be lowered in the same manner and add a few ounces more weight to front shoes and allow your colt to be driven as low headed as is comfortable.

When you try this remedy for a mixed gaited colt or horse you will be surprised why you have not been able to find it out years ago.

The pacing youngster with not much of any kind of action at either end, needs to go in short toes and heavy shoes all around and if the toes of shoes are beveled or rolled it will be very good the first time shod. After your

HORSE-SHOE STACK—ALLEN FARM, 1916.
W. J. MOORE

pacing colt begins to make speed, shoe to prevent slipping at both ends, with heel and toe calks on hind shoes. As a rule they go high headed, it seems to suit the majority of pacers.

If your pacer begins to crossfire lower the inside of hind feet but if you cannot lower the feet on the inside raise the outside with the thickness of the shoe, thick on outside and thin on inside. If you can lower the inside of hind feet low enough, a plain shoe will do with calks. The best shoe for a cross-firing pacer is a heavy sideweight shoe, thin and rounded off on the inside toe. You do not need any *projections* on this shoe, heel or toe, if the foot is properly prepared to widen action. If your colt gets to winging to his knees, lower the outside of front feet from centre of toes to heel on *outside*. If your colt begins to paddle with one front leg or the other, lower the inside of the foot or feet as much as they will stand, this will leave the outside toe the longest to leave the ground from, which, when at speed, will prevent a lot of paddling. The lighter the shoes on a paddler the better, but if he has to carry some weight in his shoes to balance action, put all the weight in the outside of his shoes. If you use a toeweight, attach it near to the outside toe for better results. Paddling is caused by the contraction of muscles on one side of the leg, the same as winging in, and not always by bad shoeing, the main thing is *foot fixing*.

Some say there is nothing under the sun perfect. Foals developing in the womb of their dam sometimes will be in a cramped position, which contracts those muscles or ligaments that cause winging in or paddling out. As some of the yearlings and weanlings show this faulty line of action before ever being shod. I have seen yearlings that were knee-knockers to begin with and you would think confirmed ones and after one, two or three shoeings you could not hear them knock their boots on the turns, and they would

later develop into fast trotters and win races or take fast records at two and three years old.

At the Allen Farm, where I have been located for a great many years, I have seen results obtained by foot fixing and shoeing that satisfied me that there were secrets hidden from most of the public in the art or science of foot fixing and balancing faulty action, and from my experience and the results obtained, I felt that the public was entitled to my knowledge so gained. I have seen yearlings step eighths of a mile from 15¾ to 17 and 18 seconds, and many of them. I have seen a yearling step the last sixteenth of an eighth in seven seconds, a 1:52 gait, on this half-mile track which should go a second faster on a mile track.

Now if the foot fixing and shoeing that I have explained in this book and have been practising for years is not the nearest approach to the proper and correct way of balancing the action of the trotter and pacer, why has Bingara become the champion fourteen-year-old sire of 2:30 peformers, located as he is in this cold climate and far away from the section where are the greatest number of producing dams? Mares by Kremlin 2:07¾, the champion living brood mare sire of the world, have produced wonderful results. Through these channels came Baden 2:05¼, a trotting race horse that raced on both half-mile tracks and mile tracks and was badly handicapped in many of his races by being scored ten, twelve, fifteen, and as many as seventeen times before getting the word. This scoring was not all done by one driver or one horse, but by different drivers and different horses trying to break the horse's heart repeatedly, and when they could not rupture his legs, unhinge his back, rattle his thinking box or break his heart, Mr. Geers and Mr. Cox, the great race drivers, said that Baden 2:05¼ was the greatest race horse ever seen. In all my experience with the produce of Bingara I have never seen one yet that wanted to pace if looked

after in his early education. I know him to get trotters from pacing mares, and nothing but trotters from all kinds of mares, his power to transmit the trotting gait to his produce is something wonderful, and his only pacers are those that were forced by the unsportsmanlike use of hopples.

XXVII. NEGLECTED HIND FEET.

The hind feet on both trotters and pacers are the worst neglected when receiving their preparation in training and racing. Is your trotter or pacer going rough gaited with his hind legs? Is your trotter hitting his coronets, is he speedy cutting, is he hitting his shins or hocks? Is your pacer hitting his front shoes, or cross-firing? All this unbalanced action comes from an unbalanced, unprepared, and unweighted foot, most times—nearly nine out of ten—from cutting the outside of hind foot too low from center of toe back to outside heel leaving the inside the highest, which will control the line of action of the leg after the foot leaves the ground.

Lots of people do not know this and lots of horsemen do not know this until they get into trouble and commence experimenting with some fandangle shoes, long heels on one side and short heels on the opposite side, or some projection on some part of shoes that creates strain and friction trying to overcome a badly fixed foot or feet. If your trotter or pacer is doing any of the above stunts, the insides of his hind foot or feet are a lot too high for the outside. Cut the inside of hind feet down as low as they will stand, low enough to change the angle of the feet, to make the feet or angle longer to leave the ground from. If his toes are the right length do not touch them.

The best shoe for your trotter in this case is a side-weight shoe, a little heavier than he has been carrying—two or three ounces heavier. The best shoe for the pacer

is a sideweight, same as above and it can be an ounce heavier than above, say four ounces heavier than he had been carrying. After your trotter or pacer becomes purer gaited you can dispense with this extra weight. Shoe light and as long as the foot or feet are kept level and at the right poise and angle you will not have any trouble. I do not recommend shoes with a long heel on one side and a short one on an opposite side on a correctly or properly fixed foot, or feet, for fast work or racing, because such shoes create undue friction *at speed.* When a hind leg is extended and foot or feet are properly fixed and balanced on the leg, both heels of the foot should strike the ground at the *same time.* If the heel on one side of shoe is three-quarter of an inch longer, or half-inch longer, this long heel hits the ground first, before the opposite heel hits, which is unnatural and disagreeable to the bones of the feet, that work in sockets. It has the tendency to shift the bearing of the bones in their sockets on landing and leaving the ground, and gives extra work to the ligaments that hold the bones in their sockets. On slow going horses this long outside heel does not affect them as severely as on horses that are working fast or racing. You must remember when horses are going at a fast pace they land on their heels as a rule with their toes elevated away from the ground. This is one of the main reasons why the heels of hind shoes should be the same length on both sides at *speed* or taking *fast* work. There are lots of horses that would have been faster and better race horses if their hind feet and action had been properly balanced to work harmoniously with one another. The speed of a horse depends largely on the propelling power of the hind quarters. The muscles of the thigh, stifle and whirlbone need looking after in their early preparation to keep the soreness out of them until they become hardened. Do not work your horse on a slippery track, wait a day or you may be sorry, if he is not eating skip a workout, it will suit the horse.

XXVIII. KNEE ACTION WITHOUT EXTENSION.

Many horses have plenty of knee action and no extension. This horse is carrying weight enough, and foot is prepared to make him knee up, but is unbalanced both by the weight application and foot fixing to develop the proper extension. The feet of a horse gaited in this manner need the quarters and heels of front feet lowered as low as safety will permit, do not touch the toes of front feet, place the front feet at as long an angle to leave the ground from as possible, reduce the weight of the front shoes and add it to the feet in a toe weight, and pull his head down some if you have to use a standing martingale and let him come along gradually.

Too much knee action is lost motion and tiresome. I found that out for myself walking through the deep snows that we have up here in the Berkshire Hills. Too much folding of the knees causes elbow hitting, and at times when they do not reach their elbow some of them will hit on the back of their arm. One of the worst speedy cutters I ever saw was gaited in front in this manner. I decreased the knee and folding action, changed the hind feet, which were very high on inside, lowered them and shod with heavy outside weight shoe and she trotted clean and pure, quarters in 31 seconds in May. She had one sore on her as large as a silver dollar from hitting, and when she began hitting she would try and run away.

XXIX. HORSES THAT GET AWAY SLOW, BUT FINISH FAST.

In these cases I feel sorry for the horse also for the driver. The horse knows he is handicapped, and the driver does not want to take any desperate chances of getting shut out by trying to get away with the field of starters, anyhow

I will say, the horse is unbalanced to get away, got a lot of speed but can not find it when it is needed. This horse needs assistance in foot balancing and weighting. The front action on this kind of a horse needs to be increased more for extension than anything else, increase his extension and everything else will take care of itself.

To help this horse to get away, I would change the angle of his front feet, make the angle longer to leave the ground from. If the angle of his front feet is at 54 or 55 degrees change it to 50 or 51, if it is at 52 or 53 degrees change it to 48 or 49 degrees, add three or four ounces more weight to his front shoes and carry the same toe weight that he has been carrying. In fixing his front feet do not touch or take anything off his toes, shoe to prevent slipping, especially the hind feet. If this horse has been carrying a light shoe in front—seven, eight or nine ounces—it will require not less than four or five ounces more weight to get away with his field. If this four or five ounces balances him to get away with his field, he will not pull you hard to hold him together. If this horse is not inclined to mix, I would have the toes of hind feet an eighth or quarter inch shorter than those of the front feet and at an angle of about 54 or 55 degrees, but if he is inclined to shift or mix into a single foot, have the hind feet as near the same length and angle as the front feet as possible, the nearer the better. If it takes two or three ounces more weight to balance faulty action, use it, put it on his feet, if you don't you will wear him out pulling on him, you will make him muscle-sore propelling against your strong arms, pulling 100 or 150 pounds on the bit. It creates a terrible strain going the last quarter of a fast mile, especially on youngsters, and some trainers wonder why some of their pupils don't go on and develop speed, and wonder why some of them become so tired after passing the three-quarter pole. No matter how royally bred they are, they

need to be properly balanced to go the distance on as light a pull on the bit as possible. If you depend on balancing them by holding them together by pulling against their jaws you are a back number for a youngster or aged horse is not doing his work in comfort and with ease going against a heavy pull on the bit. There is nothing that will wear out a yearling, two-year-old or three-year-old quicker than hard pulling against the bit, for it over-taxes the muscles of the propelling power caused by being unbalanced. Their propelling muscles will stand it for a while, but not for long. If you can get your colt or horse properly balanced he will not pull you, he would rather go at speed in comfort and ease to himself than to get unhinged in the back propelling against a heavy pull on the lines. The trainers that can detect or locate faulty action and know what to do to remedy the same are the ones that make a success of developing, conditioning and driving in races. It takes judgment, a good eye and ear to detect faulty action. It takes an expert to detect a badly fixed foot that was intended to help the line of action.

XXX. TO CONVERT A PACER TO TROT.

Begin by fixing his feet, cut or rasp the quarters and heels of all four feet down as low as possible without getting any sole pressure against the shoes that are fitted. Have the length of toes as near alike as the case will permit, I mean by not taking anything off the toes of front feet or hind feet, supposing the toes are near alike, he will need all the toe possible to convert him to the trot from the pace. Shoe front feet with a heavy toe weight shoe, it may take fifteen or seventeen ounces. If you have to use any toe weight while going slow it is best to weld spur on toe of shoe and use a toe weight fitted to the spur. It is best in his case, in order to convert the pacer to trot, to have a

grab on the front shoes. Shoe the hind feet with a light shoe with toe and heel calk, drive him as low headed as possible even if you have to use a standing martingale, bring him along slow, by degrees, for as it effects a change of muscles it is something new to the horse and the more time you take in bringing along trotting, the more you will be perfecting the gait. Don't hurry matters. After a few weeks he will have more growth of foot and can lower his quarters and heels a little more giving his feet a longer angle to leave the ground from. In converting a pacer to trot, a four-inch toe is not too long on some horses, but on yearlings and two-year-olds their feet will be shorter, but the closer you get the angle of front and hind feet to 50 or 51 degrees with same length of toes hind and front, the better, to confine him to the trot, and keep him trotting. In some cases the angle needs to be 48 or 49 degrees in front, and as near to that as you can get the hind feet.

XXXI. CONVERTING A TROTTER TO THE PACE.

Shorten and lower the toes of all four feet, do not touch the quarters or heels of front or hind feet. The weight of the shoes will vary on different horses. On a youngster I would put a five or six-ounce concaved shoe in front, and about nine or ten ounces behind, with toe and heel calk. On an older horse the weight at both front and hind can be correspondingly heavier, about eight ounces front and eleven or twelve ounces, with heel and toe calks behind. Now when hitched ready to go for the first lesson, check the head as high as the horse or colt can carry it without causing pain and misery to the neck. If he paces any, a half mile up to a mile and a half is enough for the first three or four lessons. If he acts good do not let him go too fast for the first week or ten days, you must take two or three weeks before asking him to step. The angle

of the front feet should be about 55 degrees and the angle of the hind feet should be about 59 degrees.

Some horses that go into a singlefoot or strike a pace occasionally can be easily converted to the pace by shoeing light in front and heavier behind, from three to five ounces more weight in each hind shoe than he is carrying in his front shoes. If he does not take to the pace readily add more weight to hind shoes, and bevel or roll the toes of shoes, and check head higher. You need a short natural foot all around to convert to the pace. The angle of the feet will vary according to their pasterns. If the horse has a long oblique pastern, shorten the toes hind and front as much as they will allow to be safe, and do not touch the heels.

I used this method of converting Joe Patchen II from the trot to the pace, and many others. They could not make him strike a pace and after fixing his feet and shoeing him he went out on the track and paced an eighth of a mile in eighteen seconds after having been driven at the trot for over a year.

XXXII. CONTRACTED HEELS.

To expand a contracted foot or quarter the first thing to do is to get the foot soft by poulticing or stuffing with "Whiterock" for a couple of nights. Use hoof expanders that are stronger than the hoof, some feet are so strong and stiff at the quarters that the foot has to be weakened between the bars and frog so that the expanders will expand it. If you want the inside quarter expanded leave the last two heel nails out of the inside of shoe, put a toe clip on shoe and a clip back at the outside heel and do just the reverse to expand an outside quarter. In this way you will be getting all the expansion on the contracted quarter. If this shoe is fitted so that the expander can be placed in

the foot after the shoe has been nailed on, the contracted quarter will be expanded over a quarter of an inch before the shoe is clinched up. Nails should not be used back towards the heels of a contracted foot that is to be expanded. When the foot expands wider than the shoe, reset shoes and renew the position of expander to act stronger. The softer you keep the feet the faster they will spread, do not let them get dry and hard. The expansion you get in the foot of a yearling or a two or three-year-old can be kept after the expander has been discarded by not allowing the heels to be kept too high for too long a time. But in aged horses that have had contracted feet or quarters for years and have become set, you can expand the feet or quarters, and when you stop using the expanders the heels and quarters will contract right back to where they were before, in the majority of cases. In cases of this kind in aged horses after the feet have been expanded the quarters should be cut down low and the coronets blistered on both inside and outside quarters.

There are lots of horses with contracted heels and the heels become so high from the coronet to the shoe bearing surface and have stayed this way for such a length of time that they cannot be cut down without hurting or injuring the horse, until after the feet have been expanded. The sensitive part of the foot gets a long ways down from the coronet in a contracted foot, and to cut or lower the quarters and heels to place the foot at a proper angle, it cannot be done until the foot is expanded. The more you expand the foot the lower you can cut or rasp down the heels. The more you expand the heels the higher up you are driving the sensitive interior of the foot at the quarters. In many aged horses after the feet are expanded it will be well to continue the use of expanders, to prevent contraction, for a period of six or twelve months.

XXXIII. CAUSE OF CONTRACTED HEELS.

A disease called Thrush, located in and about the frog is sure to contract the heels of a foot, if not cured quickly. A foot troubled with thrush should be cured when first discovered, if not the frog keeps perishing away until there is not enough of it there to hold or keep the heels from contracting. Another cause is allowing feet to grow too high at the heels and letting them remain too high for too long a time. When the heels get too high the frog is too far away from the ground to get any expansion, or to prevent contraction. The closer the frog is kept to the ground on a horse running in pasture or shod and working, all the better. Stock running in pasture, young or old, should have their feet rasped down regularly every five or six weeks at the longest. Some may need it oftener than that. This fixing of feet on stock running out, assists expansion and prevents contraction. If the feet are allowed to grow too long on stock running in pasture the position the animal has to stand in while grazing, with one leg out in front of the other will contract or curl the inside quarter of each front foot, and wing out the outside quarter. Shoes staying on too long, and horses kept on dry, hard floors where they do not get any moisture, will cause contraction. The feet of horses kept on dry hard floors should be stuffed at least every other night with clay, or whiterock, or something of a moistening nature. Contraction is the main cause of both quartercracks and corns. To cure Thrush, cleanse the frog thoroughly, then a few applications of dry powdered calomel to the frog will dry the disease up and leave the frog healthy.

XXXIV. CORNS.

A live, painful corn is caused by different things. High contracted heels will cause corns as well as short ones. Shoeing and leaving the shoes on too long, and undue con-

cussion will cause corns. The majority of cases of corns will be found in contracted feet. I find the most successful way to treat corns is to get the foot or feet soft and keep them soft. Shoe with a bar shoe, lower the heels so as you can get all the frog pressure possible on the bar of the shoe, after the shoe has been fitted, and before nailing to the foot, cut the heel bearing away from the shoe where the corn is located, an inch of the bearing surface ahead of the corn and half an inch or more away from the shoe to break the jar and reduce the concussion. If foot is contracted use an expander inserted in foot before shoe is fitted, and keep foot soft. I do not recommend cutting the bars and sole away where the corn is located and leaving the wall standing up all alone, but cut the whole heel seat of corn and bar down *flat,* away from the bearing surface of shoe.

XXXV. TOE CRACK OR SPLIT FOOT.

A foot with a toe crack should be kept as short as possible at the toe. Apply a stiff hoof expander, use one or two rivets or clamps as high up and as near the coronet as possible after cutting the horn where one side laps over the other the full length of the crack. After inserting the hoof expander fit a bar shoe to the foot with a clip at each side of the toe, and before nailing shoe to foot cut the bearing of foot away from the shoe across the toe. If the foot is not contracted any I would recommend a clip back at each heel. Treat the same as is prescribed for Quartercrack, after cutting away half inch each side of crack at the coronet. If foot is contracted do not use any clips back at the heels and keep the foot soft.

XXXVI. QUARTERCRACK.

A quartercrack is a split or crack in a quarter from the coronet down towards the bottom of a foot. At times it is

very painful and prevents the use of the horse. In most of these quartercracks one side is lapped over on the other one-quarter or three-eighths of an inch, and from the continual expansion and contraction of the foot while the horse is in action the lapped parts are continually working against one another as the foot expands with the weight of horse on it, and contracts when the foot is lifted up. This kind of action of the split horn at the coronet is what prevents it from knitting. The first thing to do is to apply a few poultices which will get the foot soft. If the foot or quarter is contracted apply a hoof expander. In fixing the foot rasp the foot as low as possible without making it tender, at both heels and toes. Do not cut any sole or bars out or cut the heels open with the knife, have the side of foot where the crack is on the lowest or you can have that part of the shoe quite thin, so that the jar or concussion will be on all parts of foot, except the quartercrack. Use a bar shoe with plenty of frog pressure, a plain shoe is best. If you have to have calks, place the heel calk on cracked side ahead of crack on shoe if possible. If the crack is close to the heel, take the bearing of foot away from the shoe by cutting the heel down. Now cut the horn away on the side that is lapped over the other the full length of the quartercrack, cut the horn away one-quarter of an inch each side of the crack at the coronet, if it bleeds a little it will not hurt. Now a blister at the coronet above and on each side of the crack will be beneficial to start the growth down solid, if it should crack open again apply a stronger one. After the crack starts to grow down solid, apply a little of the blistering ointment every week or ten days but do not let it blister, just use enough to keep it sweating, it will toughen and soften the horn as it grows down. A rivet or clamp drawing the edges of crack together as near the coronet as possible, to hold it together and strengthen it will be very beneficial. A salve or ointment formally made by

the late Geo. W. St. Clair, and now by Mike Bowerman, of Lexington, Ky., is the best thing I have seen to help knit and grow down a quartercrack. A little North Carolina tar rubbed into coronet over crack every other day I find is excellent.

XXXVII. DISHED OR SCOOPED TOE.

This is caused by allowing feet to grow too long, especially on colts and horses in training, creating undue pressure and strain on the front of foot on breaking over to leave the ground. It is also caused by being foundered, where the soles of feet have dropped, and also where the fever has settled in the feet, and the soles have not dropped, but are inclined to be contracted, dry and hard, and kept at the wrong angle, and feet not kept properly fixed and shoes not properly fitted. The remedy for this is to fix the foot at the proper angle, keep the frog close to the ground. Pare the sole a little thin around the toe from the point of frog out to the wall at the toe, and after the shoe has been fitted, cut the bearing of the foot at the toe away from the shoe. A few shoeings of this kind will prevent the toe from turning up.

XXXVIII. CONCUSSION.

Horses with high knee action hit the ground the hardest. The more weight a horse carries in his shoes or toe weights, the more concussion he receives. The concussion on the hind feet and legs does not seem to pain or sting anything like what he has to endure in the front feet and legs when striking the ground fast and hard, especially when he is going over a hard piece of ground. If his front feet are out of proportion, high heels and long toes, dry and hard, he will feel the concussion severely and this will make many horses unsteady, breaking and acting bad. A horse

with lofty forward action should be trained in a natural low quarter and low heeled foot, with a bar shoe as light as possible, with frog pressure.

The most dangerous and uncomfortable kind of a foot for a horse that hits the ground hard to have is one with the heels abnormally high. The higher the heels the greater the concussion. The lower the heels the less the concussion. The more weight the more concussion. The less weight the less concussion. A foot that is kept at the proper angle, as near to a natural foot as possible, and kept soft, will prevent the stinging and painful sensation that is caused by concussion. With feet kept like this the horse will not flinch or shorten up in his stride when he strikes hard places in the track. The light thin heel calks that are used on shoes do not break much of the concussion when horses are going fast. Why? because when the legs are extended at speed the shoes land on the ground back on the heel, with the toe of the foot elevated away from the ground, and with some horses more than with others. They do not strike the ground flat-footed like the most of them do when going slow. Thin hard pads are very good under light shoes, but thick pads that will allow the walls of a horse's foot at heels to sink or cut through them at the heels are no good. They will create a hard lump at the seat of corns between the bar and wall at the heels, and hold dirt that is liable to create unpleasant feelings to a sensitive horse that goes in middling low heels. When heels of the front feet are allowed to become too high on horses taking fast work or racing, a very severe strain is thrown on the ligament or tendon that holds the navicular bone in its socket. When the leg is extended at speed the extra high heels cause the foot to land too far ahead of the leg while the toe is elevated on landing, so that it creates an extra amount of work for the ligament to hold it in its proper position at the time of impact with the ground.

XXXIX. FOUNDER, CHRONIC LAMINITIS OR DROPPED SOLE.

There is only one way to shoe this kind for comfort to the animal, and for an earning remuneration for the owner. In founder or chronic laminitis, where the sole of feet are dropped, caused by the displacement of the weight bearing bones of the foot, fix the feet by lowering the quarters and heels so as to get as much frog pressure as is possible, without making the foot tender, and your foot is ready for the shoe. A shoe for a dropped sole foot must be a bar shoe, thick at the toe and thin at the heels, with a wide thin bar to receive the frog pressure. To make a shoe to suit this kind of diseased feet, use a piece of iron three-quarters to one inch square according to the nature of the disease and the weight of the horse, and in making the shoes for foot founder leave all the thickness of the shoe at the toe possible, and thin the shoe at the quarters and heels to a quarter of an inch, have the bar wide and thin so as to receive all the frog pressure possible, the thicker the toe of shoe and thinner the quarters and bar at heels the better. Concave or cup the shoe out so as not to get any sole pressure.

I will cite one case of this kind, the very worst in my experience. A horse that weighed over 1400 pounds that could scarcely stand on his feet, had been treated by different veterinary surgeons and shod several times and could not keep the shoes on his feet and he was so sore that I got wet with perspiration getting two nails in one shoe and I had to stand him in a very soft place to do that. This horse would lay down in the lot most all the time and eat the grass from where he could reach it and then move to where he could reach more, he was the most hopeless subject I ever came across. I shod him according to the instruction herein prescribed, and he trotted off with his tail curled over his back like a colt. He was put to work the

next morning and continued at work until sold for two hundred dollars. Elevating the heels with calks creates pain and misery to the animal.

XL. CROSSFIRING PACERS.

When a pacer begins to crossfire every one knows he is not balanced. There are different causes for crossfiring: front feet not properly fixed and at the proper angle, not carrying the proper amount of weight in front will help to cause it, and on hind feet the same. Too much slipping will help to create it. But the most important thing that causes crossfiring, nine times out of ten, is because the hind feet are a lot higher on the inside than they are on the outside, which creates a leverage to leave the ground from when at speed, which extra height or length of foot acts as a leverage to control the line of action of the leg after the foot leaves the ground. In all my experience with crossfirers I have found this the most important factor, namely, the inside of the offending feet to be the highest. So the fixing of the feet is the most important part of the contract. If you can get the feet properly fixed to change the leverage, to control the line of action, there will be no more crossfiring. (This same rule applies to a trotter that is unbalanced if the insides of his hind feet are the highest and when he strikes a singlefoot or pace he is very likely to crossfire). The pacer that begins to crossfire needs the insides of the hind feet lowered, a little longer angle to leave the ground from, with the height or extra length of foot to create a leverage on leaving the ground to be at the outside toe. A foot properly fixed as herein prescribed and a properly made and fitted shoe will stop crossfiring. I would recommend a sideweight shoe, the weight to be applied to the outside of feet, the inside to be beveled or rounded from center of toe back to the inside quarter of each hind shoe. The shoes could be a few ounces heavier

than previous shoes for best results. As a rule pacers go best and fastest in shorter feet than the trotters. The easier a pacer can leave the ground the more rapid gaited he will be, and the more he will be inclined to stick to the pace. By all means shoe to prevent slipping both in front and behind. A proper angle for the front feet has to be found, also for the hind feet, so that the speed at both ends will be in harmony, if one end is faster than the other there will be friction.

There will be found in this work directions as to how to lengthen or shorten the stride, to increase or decrease knee or hock action, to widen hind action, also the best way to prevent winging in and paddling out, at speed. Also how to quicken the action of dwelling gaited ones. As to the proper amount of weight that the horse goes the fastest with in his shoes, the trainer should know better than any one else, but all trainers are not the best judges of gait, an expert on the ground taking a view from in front, from behind, and a side view, has a big advantage over the driver. An expert trainer and race driver knows when his pupil can step a mile, half or three-quarters at a 2:10 or 2:05 or a 2:00 gait on a light line, that his horse is all right, if there is any friction he can see it or feel it on the lines.

XLI. NOTE OF IMPORTANCE.

Now right here is the most important part of a little transaction that should not be omitted from any trainer's records. The condition your horse has worked up to and how he has been cared for, his weight, whether he wears calks or not, what is the angle of his feet and length of toes front and hind, what is the weight of his front shoes also his hind shoes, also about his harness, the exact length of back strap and check rein, and what hole the buckle belongs in in the check rein should be carefully noted. If you

keep a record of these things no one can tell you what your horse needs, for you will know it yourself far better. If a change takes place and it is not physical, it may have occurred in the shop if he has been shod recently, and as you have kept a record of his feet and shoes and harness you can find out by reference to it

The last time I was in Lexington, Ky. I was working at my trade, shoeing horses, when I was approached by a gentleman by the name of Saunders, he said to me that he was told by some of his friends to see me about shoeing a cross-firing pacer that he had and he also said that I was recommended to him very highly. I told him I could tell him what I could do for the horse after seeing the condition of the feet, if I could help him or not, so he had the horse led around to my tent to be looked at. After looking at the feet and shoeing, I told him I could help that horse wonderfully, so the next day my subject was led around for me to operate on. I had learned that this horse cross-fired so bad they could hardly keep quarterboots on him, and they were afraid to work him on account of crossfiring. He was entered to start at the meeting but was a little short of work. His feet were in bad shape according to the calipers and foot adjuster and to my eye. I fixed this horse's feet to pace without cross-firing and truly, according to the prescription given in this book for cross-firing. That horse responded to the treatment instantly and the horse paced fine with no more cross-firing. He was worked a couple of times during the week and went all right, and during the meeting he was going so good they agreed to start him. He started in the race and if my memory serves me right he finished second the first heat, the second heat several horses finished ahead of him, I do not remember how many, but when they came out for the third heat the driver of this horse was called up in the stand to watch this horse while a driver by the name of Mike Bowerman piloted

him to victory in three straight heats and he took a record close to 2:10. I believe the horse's name was Sable Gift, or some other gift. The only gift the horse got was a record, something he did not want, neither did those that were buying first, second and third choices.

XLII. KEEP THE FEET LEVEL.

The front foot should never be the highest on the outside of a trotter or pacer, unless the horse paddles with one or both front legs. A foot that is left high on the outside and low on the inside will help to prevent paddling and will increase the winging in to the knees. A foot that is kept high on the inside and low on the outside will help to prevent winging in to the knees. There are lots of paddlers who do not begin to paddle until the foot has left the ground quite some distance, and to prove this I have seen the shoes worn by some paddlers and the most of the wear on the shoes of the paddling leg or legs was at the outside toe of shoe. A paddler that leaves the ground from the inside toe of shoe can be made to carry the leg straighter in a line at speed easier than one that leaves the ground from the outside toe.

The reason why a front foot should not be left highest on the outside, of a trotter or pacer, unless he is a paddler, is this; supposing the front legs at the chest or where the upper arm joint is connected with the chest is ten, twelve or fifteen inches apart, I mean the distance the two front legs are from one another where connected with the body. Now when this horse is at speed and can go fast at the trot or pace, like most all fast horses at speed, his foot prints will be straight in a line one after the other on the track. Now if their upper arms are ten or twelve inches apart, more or less, and at speed their feet land nearly on a line, the front legs are not working forward and backward in a straight up and down line from the body, so this being the

case just try to imagine just how those two front feet land on the ground with the legs wide apart at the upper arms and the feet landing straight in a line or nearly so at speed. The question is, should the outside of front foot be lower than the inside, if so, how much, to distribute and equalize the concussion on both sides of a front foot at the heels *when at speed.* What I am trying to explain is, if you have a fast trotter or pacer and he does not paddle, and you are working to develop speed intending to race, and if the outside of the front feet are the highest and the inside of the hind feet are the highest, every time you work this horse with unbalanced feet you are guilty of one of the greatest crimes that are committed by trainers and horse-shoers.

In fixing the front feet on all fast horses, trotters or pacers, that do not paddle, first rasp the outside of a front foot down to where you want it, toe and heel, then you can rasp the inside of the foot down to where it will suit the action of the leg the best. The reason for this is you can always lower the inside of a front foot a lot lower than you can the outside of same foot and when you rasp the inside of a front foot down *first,* nine times out of ten you will not be able to rasp the outside of the same foot down to a level with the inside. Now the hind foot is just to the reverse. Always rasp to lower the inside of a hind foot down first to where you want it and then take the outside down to a level with it. If you do not fix feet by this rule, the sensitive portion of the foot will often prevent you from lowering it enough to level up matters with opposite side, and the sensitive parts of the foot that will prevent you from doing this will be the outside of a front foot and the inside of a hind foot. This is the main reason why so many floormen in shops all over the country cut the inside of front feet too low for the outside, and leave the inside of the hind feet too high for the outside of same. But if you will fix feet by this rule you will be right the most of the time.

XLIII. PULLING ON ONE LINE AT SPEED.

I was approached on this subject and had it explained to me that a certain horse going the right way of the track at speed would go on one line and keep going into the fence or hugging the pole, and would make two or three breaks going the length of the stretch on a half-mile track, and could not be kept away from the fence. After an examination of the teeth, cheeks, and tongue, and bit, and finding these to be all O. K., I concluded that it must be from uneven extension of the legs. The extension and propelling power of the off legs was greater than that of the nigh ones. A three-ounce toe weight on the feet of the nigh legs straightened or balanced up the lost action of the nigh side so that the horse would speed the length of the stretch in any position on the track without pulling on one line and so the necessity for pulling on one line to keep the horse straight was stopped.

The feet on this animal were well fixed hind and front, as to length of toes and angle of feet, the hind shoes weighed alike and the front ones also. The muscular development of the extension power of the off legs was stronger than that of the nigh legs, perhaps also the propelling power of the off hind leg. This is the reason the horse was pulling on one line. The off legs were reaching farther than the nigh ones, which kept forcing the horse to go towards the fence. Unbalanced feet will cause this as well as undeveloped muscles. I have no doubt but there are lots of horses going on one line and hugging the pole that need a change in the angle of the feet, or the proper weight at the proper place to balance up matters. If the strides of this horse had been measured there would have been found a big difference between the off and nigh strides, so you see it is not always the teeth, cheeks, or bit that cause this trouble. The horse in question later stepped miles in 2:09.

XLIV. A GOOD JUDGE OF GAIT.

In all my experience with horsemen and horses I believe William Russell Allen's judgment about gait and prospective or ultimate speed is superior to that of any one I have ever come in contact with. He seems to have the faculty of knowing at a glance the frictionless gait from a fairly good gaited one. To prove this I will cite a few instances. On one occasion he was away on a visit and on his return he said to me that he saw Uhlan 1:58 as a two-year-old or a three-year-old, I do not remember exactly, but it was before he came into prominence, and Mr. Allen told me he was the best gaited colt he ever saw. This colt must have been just as he said, for it could not have been over a year, or two at the outside, when this same colt trotted to a world's record, and it did not surprise me much after remembering what Mr. Allen told me about his gait. The same thing happened again when he saw Peter Volo 2:02, early in his two-year-old form. Also the full sister to Peter Volo, Volga, Mr. Allen told me she was gaited to win all her engagements.

Here at Allen Farm he picked a yearling out of about thirty early in the season, that was out of a non-producing dam, to beat all the yearlings an eighth of a mile at the trot that season at the farm on a small bet. It was big odds and was taken very quickly by one of the employees, who was wishing he could get more of that kind of bets. When the brush work of the season was over the field ticket was never presented to the pool seller to be cashed. Mr. Allen's first choice out of a large field won by a quarter of a second and we had a lot of fast ones, but any how he had the laugh on me at the finish.

XLV. BAR SHOES.

If you have a horse with toe cracks, quarter cracks or one that is sore or lame from corns, a bar shoe is the best

kind of a shoe. If you have a horse with a dropped sole, or founder footed horse the bar shoe is the best kind for such feet. It is also a good shoe to be used on feet where expanders are used as the bar in the shoe will protect the expander at times when an open shoe will not, and frog pressure on the bar will also help to get expansion. The most important thing to guard against is, do not drive any nails back of the quarters because that will prevent expansion. Draft horses with wide low heels or thin soles require bar shoes for the hard roads, as they stay sound longer wearing bar shoes than in open shoes. For racing purposes the bar shoe is very important for the front feet, and occasionally for the hind feet, for both trotter and pacer. Any horse racing or in training that carries a light, or very light front shoe should by all means wear a bar shoe, it is a great support to the foot when hitting the ground hard and fast, as the natural expansion and contraction is at its limit while going at a fast rate of speed.

For a heel-weight shoe you can get more weight in the heels of a bar shoe than in an open shoe, which heel weight the action of some horses requires more so than they do toe weight. A trotter or pacer that spreads his hind shoes or front shoes, should by all means wear bar shoes. The last time I shod John R. Gentry for Mr. James Ramey, I shod him with bar shoes all around with heel and toe calks for that memorable race at Detroit in the 2:13 or 2:14 class, he won his race easily breaking the track record, under strong restraint. He could have paced a very fast mile or two that day if he had been asked to do it, he was sold after this performance..

I have never seen many yearlings or two-year-olds that needed a bar shoe while in training. It is a very bad shoe for either yearling or two-year-old unless a hoof expander is kept in the foot to prevent contraction and help expansion, for the feet will surely get contracted without some-

thing to prevent it, after the heels grow high enough to lose their frog pressure. I used a pair of heavy heel-weight bar shoes, about ten or eleven ounce, on one yearling's hind feet to stop forging and scalping while he was being jogged every day. The shoes he was brushed or speeded in for about ten days did not suit him for jogging. This yearling trotted eighths in 17¼ seconds, a 2:18 gait. I tried more weight in front but it did no good.

XLVI. SLIPPING OR SLIDING TOO MUCH.

Slipping will unbalance a horse when trying to get on his stride at speed; slipping too much on landing or on leaving the ground creates lost action that cannot be overcome by muscular development. I will cite a couple of cases here to prove this. A horse that trotted in his work miles in 2:27 over a half-mile track, when shipped to Rigley, Portland, Me., could not trot a mile there in 2:45 without being very unsteady, and this over a mile track. I examined his foot prints and saw he was slipping too much. I calked his shoes with toe and heel calks, never changed his feet, and this horse trotted miles in 2:25 without a break.

A mare that was trotting miles in her work over this same half-mile track in 2:25 easily, quarters in 33 or 33½ seconds, was shipped to Portland, Me., to a mile track and could not trot a mile there in 2:40 without mixing and acting very unsteady. On examining her foot prints I found she was slipping too much. I was sure her feet were fixed properly. As she became very unsteady and inclined to mix, I added two ounces more to her front shoes and gave her a heel and toe calk on hind and front shoes and she became very steady the next workout, and the driver told me she could trot a mile in 2:16 or better.

After the drivers of those two horses found they would get all unbalanced trying to get on their stride, they did not

go to work with the lines and whip endeavoring to balance up matters, and cruelly abuse the dumb animals for what they were not responsible, but asked me to take a look at them. This thing of balancing faulty action with the lines and whip is a thing of the past, and he who thinks it can be done has stopped, he may be one of the know-alls and if so is past redemption and will have to be regenerated to be successful at the profession.

XLVII. SIDEWEIGHT SHOES.

Sideweight shoes are used with good results on horses that wing in to their knees or knee hitters. Apply the weighty side of shoe on the inside of foot, fix the outside of the foot from the center of toe to the outside heel the lowest, it will be good in some cases to have the outside web of shoe only one-half as thick as that of the inside, the thinner the outside the better for the winging in. For paddling out the sideweight shoe is used with the weight on the outside of the foot, be sure and fix the foot by lowering the inside of foot from center of toe back to the inside heel, have the inside of foot lower than the outside for a paddler, and have the outside of foot lower than the inside for a *front shin,* knee and arm hitter. A hind foot has to be fixed the lowest on the inside for speedy-cutting, shin and hock hitting. A sideweight shoe is used a lot for speedy-cutting, shin and hock hitting, but if the feet can be proprely leveled low enough on the insides, many horses will go clean, or good gaited without the sideweight shoe, as it is the extra high inside of hind feet that causes the closing up of the hind action that makes all the trouble.

In many cases to help matters as to speedy-cutting, shin and hock hitting the front action has to be examined. The horse may have too much or not enough front action to work in harmony with the hind action. If he is going

too high or lofty I would reduce the lost lofty action and increase the extension. If he is going too low I would increase his front action by shortening his toes and adding several ounces more weight, sometimes it will require from four to six ounces more weight. To reduce the high or lofty front action and create more extension lower the quarters and heels of front feet, shoe with an extra light bar shoe and have the foot at an angle of from 48 to 50 degrees. In making this change you will get immediate results, and if necessary you can also experiment with a toe weight to balance up matters more satisfactorily.

XLVIII. TOE WEIGHT SHOES.

A toeweight shoe is used with good results on front feet to increase the fold of the knee, more height and reach. This shoe can be used with a square, round, beveled or sharp toe, or with a grab toe calk as the case calls for. If your horse is inclined to mix and needs weight to go good gaited, the sharp toe or one with a grab on it is best. To shorten the stride, shorten the toes of feet and square or bevel the toes of the shoe but do not lower the heel any. By increasing the weight of this shoe and raising the heels you can increase the height of the front action to your liking. To lengthen the stride in using this shoe, lower quarters and heels of the front feet to an angle of 48 to 50 degrees and use the plain toeweight shoe or one with a grab on it. This toeweight shoe is the best to use on a trotter that is hitching, hopping or running behind, and when carrying one hind leg between the front ones. Bevel this shoe from a little to the outside center of toe around the inside to the quarter or near the heel with a small heel calk. This shoe must be from one to two ounces more than twice the weight of the shoe carried on the perfect gaited leg. If the good gaited leg is carrying a six-ounce shoe this faulty gaited leg or foot will have to carry 13 ounces,

not less, to change the line of action, 14 ounces will be better than 12 ounces, but the hind foot will have to be the lowest on the inside, if anything, as it was a high inside of foot that first started the trouble. A horse that is hitching should not be speeded until the action or gait of the faulty leg has been balanced, for it is so easily done. A driver who will try and drive the hitching out of a horse with the lines and whip is just as much unbalanced as is the dumb animal.

XLIX. POCKET WEIGHTS.

A pocket weight can be used jogging a knee knocker or paddler in the fall, winter and spring, to develop the muscle required and to prevent those faulty lines of action, and you can use from five to ten ounces, as the case may need to the foot of the faulty gaited leg. But be sure and shoe the foot or feet *very light,* and prepare the feet according to the chapter in this book on winging in or paddling out. If the feet are not properly prepared to help the pocket weight to control the faulty line of action, one will be working against the other, and the results will be unsatisfactory, but if properly performed as to foot fixing and weighting, and a little time to bring about the change results will be good. The hole in foot to receive the spur of the pocket weight should be about half way between toe and heel to get best results. The pocket weight should be used on inside of foot for winging in and on outside of foot for a paddler.

L. ANKLE HITTING OR INTERFERING.

There are so many different causes for this that there is no fixed rule in shoeing that will apply to all cases. I have seen horses cutting their hind ankles from the following causes: the foot or feet too high on the inside, the

foot or feet too high on the outside, the foot or feet too long at the toe, and too low at the heels, all out of proportion as to the correct angle. Horses that are weak, low in flesh, and worked beyond their physical capacity, when not able to perform their daily task without getting leg weary. conformation of some horses makes them brush, box, or cut their hind ankles.

The conformation that makes a very bad ankle hitter is one where the horse stands wedge shaped from his hips down to where his feet rest on the ground. This kind of a horse will stand with his hind feet close together or against one another when at rest, horses of this conformation and without much hock action are the very worst in this respect. The same treatment will not apply to all cases of ankle hitting. Unbalanced feet are the main cause for all ankle hitting, when not caused by some deformity. A farrier with a good eye and good judgment, on examination of the hind feet, will find out the main cause of the trouble. Keep the toes of all ankle hitters as short as possible for the shorter the leverage to break over and leave the ground from, the straighter the line of action of the leg will be; a middling high heel, and a very short toe is the best. If the foot or feet are too high on the inside, lower the insides to a level with the outside, and shoe with a heel calk, hot rasp the inside of shoes to a bevel. If you find the foot or feet too high on the outside lower the outside to a level with the inside, if either foot is winged out, wider on one side of the leg than the other, edge the foot up until you have an equal portion of the foot on both sides of the frog measuring from the center of the frog. This rule applies to all feet in foot fixing. Shoe the same as above stated.

I have seen horses cutting their ankles very bad on account of their heels being too low, and their toes too long. I have stopped this kind of ankle cutting by raising their heels with a side heelcalk seven-eighths of an inch high

and no toe calk. An ankle cutter, on account of the inside of feet being too low, and where I could not cut the outside of foot low enough to compare with the inside, I have got good results by welding a calk along the inside of the hind shoe or shoes between the first and third inside nails to make up the deficiency. A horse that boxes his ankles jogging sluggishly will go good in short toes, with a square toe shoe and heel calks.

A horse that cuts his ankles should not be checked too high but should go in a natural manner without being made to carry his head too high. The hold-back straps should never be too tight for this hugs their quarters together and that creates interfering. A horse that is a hard puller on the lines, when hitched to a light vehicle has a tendency to box his ankles on account of the hold-back straps hugging his quarters together.

IN CONCLUSION.

If you have carefully read thus far you may feel conscious that I have repeated and reiterated again and again certain things in relation to "fixing feet". If I have done this more than to you seems necessary, it is because of the importance of the things repeated, and because of my desire to impress my readers with their importance.

If you find herein anything that you are specially interested in, that to you may seem cloudy or involved, and not clear, I will be pleased to clarify and elucidate any point by correspondence.

My life study and work has been in connection with the thing about which I have herein written. I have been always, and am now, intensely and vitally interested in this subject, and my reason for putting my ideas into print is because of my extreme interest in the trotting and pacing race horse, and also because of a hope that by widening, and extending to others, the horizon of my experiences, by the means of a printed book, I may help many a sore horse, as well as many a discouraged trainer and driver and owner.

WILLIAM J. MOORE,
Pittsfield,
Berkshire County,
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June, 1916.

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